

Appl. No. : 09/530,069
Filed : July 3, 2000

AMENDMENTS TO THE CLAIMS

1-8. (Cancelled)

9. (Currently amended) A method for forming at least one opening in an organic-containing insulating layer comprising the step of:

covering said organic-containing insulating layer with a bilayer, said bilayer comprising a resist hard mask layer, being formed on said organic-containing insulating layer, and a resist layer being formed on said resist hard mask layer,

patterning said bilayer, and

creating said opening by plasma etching said organic-containing insulating layer in a reaction chamber containing a gaseous mixture, said gaseous mixture comprising an oxygen-containing gas and an inert gas, said inert gas and said oxygen-containing gas being present in said gaseous mixture at a ratio of from 30:1 to 1:1 ~~at which spontaneous etching is substantially avoided~~.

10. (Original) A method as recited in claim 9, wherein said organic-containing insulating layer is a low K organic polymer layer.

11. (Original) A method as recited in claim 9, wherein said resist layer is selectively removed from said hard mask layer while creating said opening.

12. (Original) A method as recited in claim 9, wherein said oxygen-containing gas in said gaseous mixture is O₂ and said inert gas in said gaseous mixture is nitrogen.

13. (Original) A method as recited in claim 12, wherein said ratio of nitrogen in said gaseous mixture to oxygen in said gaseous mixture is in the range from 5:1 to 2:1.

14. (Original) A method as recited in claim 10, wherein prior to plasma etching in said reaction chamber containing said gaseous mixture, a first part of said opening is created by plasma etching said insulating layer in said reaction chamber containing a first gaseous mixture, said first gaseous mixture comprising a fluorine-containing gas and an inert gas;

controlling said plasma etching in said reaction chamber containing said first gaseous mixture while creating said first part of said opening, in a manner that substantially no etch residues are deposited and that the side walls of said first part of said opening are fluorinated during said plasma etching to thereby enhance the anisotropy of said plasma etching in said reaction chamber containing said first gaseous mixture.

Appl. No. : **09/530,069**
Filed : **July 3, 2000**

15. (Original) A method as recited in claim 14, wherein said opening has positively sloped side walls.

16. (Cancelled)